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International patent application PCT/IB2004/003073

New method for viewing large web pages on small display / Mäkelä

Dear Sirs,

in response to the Written Opinion dated October 26, 2005, concerning the above-identified International patent application, a set of amended claims 1-21 is provided (intended to replace the original set of claims). It is respectfully requested that the examination is continued based on the set of amended claims and under consideration of the following comments.

I. Amended documents
Independent method claim 1 was amended by adding the additional step of determining at least one sub-object of said plurality of sub-objects to be made an active sub-object. This additional step is disclosed on page 3, last paragraph; on page 28, 2nd paragraph, and in

particular on page 42, lines 5-8 of 3rd paragraph: "The set of sub-objects then is examined in a step 802 in order to determine which sub-objects shall be active sub-objects and which sub-objects shall be non-active sub-objects".

Independent device claim 19 and independent system claim 21 were amended by the same additional feature.

II. Subject-matter of the claims

Amended claim 1 is directed to a method for presenting at least a part of an object. This method comprises the following steps:

A   At least partially dividing at least one object into a plurality of sub-objects.

B   Presenting said plurality of sub-objects in a first representation.

C   Determining at least one sub-object of said plurality of sub-objects to be made an active sub-object.

D   Making said at least one sub-object of said plurality of sub-objects an active sub-object.

E   In response to a user operation on said at least one active sub-object, presenting at least one of said at least one active sub-objects in a second representation.

The application further comprises an independent amended claim 19, which is directed at a corresponding device for presenting at least a part of an object, and an independent amended claim 21, which is directed at a corresponding system for presenting at least a part of an object.

III. Prior Art

We have studied the prior art documents D1-D5. In particular, the cited prior art documents D1-D5 contain the following disclosures:

D1: US 20020191031 A1

Document D1 discloses a browser in a memory of an apparatus, said browser presenting a first and a second window to a user; said first window being divided into a plurality of cells, each of said cells being associated with different segments of an image, said second window being used to display one of said different segments to said user (D1: claim 1). Furthermore, D1 discloses a browser in a memory of a handheld device, said browser presenting a thumbnail window and a first image segment of an image to a user, said thumbnail window being divided into a plurality of cells (D1: Fig. 3B), a first one of said cells being associated with said first image segment, a second one of said plurality of cells being associated with a second image segment of said image, said second image segment not being presented to said user by said browser (D2: claim 9). The size of each segment is

based upon the size of the users' window or screen and upon the size of the page image (D1: abstract). Document D1 does not disclose determining at least one active sub-object in order to present at least one of said at least one active sub-object in a second representation in response to a user operation.

D2:   EP 1253510 A

Document D2 discloses a method for displaying information services on the display of an electronic device by dividing the display (4) into cells (C1 to C6) and displaying in one cell (C1 to C6) information of one service (D2: claim 1, Fig. 3). The size of one of these cells can be changed, wherein the cell size of at least one other cell is changed in a corresponding manner (D2: claim 3). For instance, a user may select one of these cells by using input means (D2: column 5, lines 28-30), and the size of this cell is increased so that more information can be shown on the display (D2: column 5, lines 39-41). D2 fails to disclose at least partially dividing at least one object into a plurality of sub-objects (step A). Furthermore, D2 does not disclose determining at least one active sub-object in order to present at least one of said at least one active sub-object in a second representation in response to a user operation.

D3:   EP 0949571 A2

Document D3 discloses a method and a system for automatically re-authoring a document originally designed for display on a desktop computer screen for display on a smaller display screen, such as those used with a PDA or a cellular telephone. The automatic re-authoring system and method convert the document into a number of pages, where each page is fully displayable with only at most a minimal amount of scrolling on the display screen (D3: abstract). As can be seen from Fig. 1, a document (100) is converted into a list of sections (page 110) and each section is elided into a page (112). That is, the contents (106) of each section (102) of the document (100) is elided from the document 100 and each section header (104) is converted into a hypertext link. When the hypertext link for any section is selected, the corresponding page (112) of elided content is loaded into the browser (D3: paragraph 0044). Document D3 does not disclose determining at least one active sub-object in order to present at least one of said at least one active sub-object in a second representation in response to a user operation.

D4:   BJÖRK ET AL: "WEST: a Web Browser for Small Terminals" UIST. PROCEEDINGS OF THE
       ANNUAL ACM SYMPOSIUM ON USER INTERFACE SOFTWARE AND TECHNOLOGY, vol. 1,
       no. 1, 1999, pages 187-196

Document D4 discloses a web browser for small terminals which applies a combination of text reduction and focus+context visualisation in order to access web pages from a very limited display environment (D4: abstract). The solution disclosed in D4 consists of a proxy server part and a client application part (D4: page 188, right column, second paragraph). The proxy processing comprises a

"chunking stage" for dividing an HTML page into a number of smaller pages, or cards, which are then collected into groupings, or deck, and a "text reduction" stage for summarising extracted from the text and a "link extraction" stage for extracting all the hyper-links on each card. Furthermore, the client application provides the following display modes: The "thumbnail view" represents a focus+context visualisation comprising miniature views of the cards (D4: page 191, left column, Fig. 1), the "keyword view" presents the keywords extracted from each card and the "link view" shows the links available on each card cards (D4: page 191, left column, Figs. 2-4). As depicted in Figs. 5 and 6 in the right column of page 191, the user may select an object which is displayed in a second representation (Fig. 6). Document D4 does not disclose determining at least one active sub-object in order to present at least one of said at least one active sub-object in a second representation in response to a user operation.

D5:   US 6593944 B1

Document D5 discloses a method and electronic system for viewing a multi-frame web page on a small-sized electronic display device. A frame representation for indicating a frame layout associated with said multi-frame web page is generated, wherein said frame representation includes a plurality of geometric frame identifiers each corresponding to a corresponding frame of said plurality of frames, each geometric frame identifiers being configured for individual selection thereof (D5: claim 1). Said frame representation is displayed on said electronic display device, and a selected frame corresponding to a selected geometric frame identifiers in response to said selected geometric frame identifier being selected is displayed (D5: claim 1, Fig. 7). Document D5 does not disclose determining at least one active sub-object in order to present at least one of said at least one active sub-object in a second representation in response to a user operation.

IV. Novelty

Amended claim 1 contains the additional step for determining at least one sub-object of said plurality of sub-objects to be made an active sub-object (step C).

Document D1 only discloses that a user seletcs a cell (D1: 210) and therefore is presented with associated segment (D1: 215) in a display window (D1: 220) (D1: page 2, right column, lines 7-8) according to steps D and E of the present application, but D1 fails to disclose that before steps D and E at least one sub-object (D1: cells) of a plurality of sub-objects is determined to be made an active sub-object according to step C of the present application. Thus, amended claim 1 is novel with respect to prior art document D1.

Document D2 also only discloses that a user may select one of a plurality of cells by using input means (D2: column 5, lines 28-30), and then the size of this cell is increased so that more information

can be shown on the display (D2: column 5, lines 39-41), according to steps D and E of the present application, but D2 also fails to disclose that before steps D and E at least one sub-object (D2: cells) of a plurality of sub-objects is determined to be made an active sub-object according to step C of the present application. Furthermore, D2 fails to disclose at least partially dividing at least one object into a plurality of sub-objects (step A). Thus, amended claim 2 is novel with respect to prior art document D2.

Document D3 discloses that a document (D3: 100) is converted into a list of sections (D3: page 110), which corresponds to step A (D3: converting of document into list of section) and step B (D3: displaying the list of section in page 110) of the present application, and each section is elided into a page (D3: 112). In particular, the content of each section of the document is elided from the document and each section header is converted into a hypertext link (D3: page 6, lines 29,30). When the hypertext link for any section is selected, the corresponding page of elided content is loaded into the browser (D3: paragraph 0044), which corresponds to step D and E of the present application. But, in contrast to the present application, D3 fails to disclose that between step B and step D at least one sub-object (D3: sections) of a plurality of sub-objects is determined to be made an active sub-object according to step C of the present application. Thus, amended claim 1 is novel with respect to prior art document D3.

Document D4 discloses that a plurality of object is displayed in a first representation (D4: page 192, left column, Fig. 1: thumbnail view) and that a user may select an object which is displayed in a second representation (D4: page 192, right column, Fig. 6), but D4 fails to disclose that before this selection is performed at least one sub-object of a plurality of sub-objects is determined to be made an active sub-object according to step C of the present application. Thus, amended claim 1 is novel with respect to prior art document D4.

Document D5 discloses displaying a frame representation on an electronic display device, and that a selected frame corresponding to a selected geometric frame identifiers in response to said selected geometric frame identifier being selected is displayed (D5: claim 1, Fig. 7). Document D5 does not disclose determining at least one active sub-object according to step C of the present application. Thus, amended claim 1 is novel with respect to prior art document D5.

Thus, amended claim 1 is novel, and, further, amended independent claims 19 and 21 are also novel as these claims comprise an additional feature corresponding to additional step C of amended claim 1.

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V. Inventiveness

The amended independent claims 1, 19 and 21 also comprise an inventive step.

Regarding the inventiveness of amended claim 1, document D1 can be considered as closest prior art, which differs from amended claim 1 by the feature that after presenting the plurality of sub-objects in a first representation the user <u>directly</u> selects one the presented subject-object for displaying the selected sub-object in a second representation. This solution shows the drawback, that in case that at least one sub-object of the plurality of sub-objects contains only a little bit information and thus can be fully displayed in said first representation, a user might be confused when selecting a sub-object of said at least one-subject for a more detailed view in order to get more information, but then, when displaying the selected sub-object in the second representation, exactly the same information of the selected sub-objects is displayed as before without any advantage for the user. Thus, the user might be confused, and, further, this case shows an inconvenient handling for the user as the situation described above now requires an additional user interaction to get back to the first representation in order to view the first representation containing the plurality of sub-objects for selecting another sub-object.

In view of this prior art, the object of the present invention is to provide a method, a device and a system for presenting at least a part of an object with improved ease of use for a user.
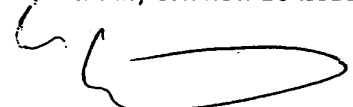
This object is reached by the additional feature of amended claim 1 that at least one sub-object of said plurality of sub-objects is determined to be made an active sub-object (step C). As a user can select at least one <u>active</u> sub-object for presenting in a second representation according to step E, the determining of at least one sub-object to be made active performed in step C enables to make that sub-objects being selectable which for instance contain more information than displayed in the first representation. Thus, an increased ease of use for the user is reached by said additional feature.

However, the skilled person, when searching for a solution for this objects, obtains no hint from prior art document D1-D5 that determining at least one sub-object of said plurality of sub-objects to be made an active sub-object could be used to reach the stated object, as documents D1-D5 does not realized the problem that the ease of use may be decreased in case that all sub-objects of the first representation are made selectable without a step for determining at least one of all sub-objects to be made an active and thus a selectable sub-object, as explained in the example mentioned above.

Thus, amended claim 1 is based on an inventive step, and, hence, amended independent claims 19 and 21 are also based on an inventive step as these claims comprise an additional feature corresponding to additional step C of amended claim 1.

VI. Final remarks

Summarized, it has been shown that the subject-matter of the present application is novel and also based on an inventive step. It is therefore expected that a positive International Preliminary Report on Patentability can now be issued.

Dr. Ralph Schippan

Patent Attorney

Encl.
Set of amended claims

SC/vo 040242WO

December 19, 2005

Set of Amended Claims

1. A method for presenting at least a part of an object,
    comprising:

-   at least partially dividing at least one object into a
    plurality of sub-objects;

-   presenting said plurality of sub-objects in a first
    representation,

-   determining at least one sub-object of said plurality of
    sub-objects to be made an active sub-object; and

-   making said at least one sub-object of said plurality of
    sub-objects an active sub-object; and

-   in response to a user operation on said at least one
    active sub-object, presenting at least one of said at
    least one active sub-objects in a second representation.

2. The method according to claim 1, wherein said at least one
    object and said sub-objects are 3D-objects.

3. The method according to claim 1, wherein said at least one
    object is a page, and wherein said sub-objects are areas.

4. The method according to claim 1, wherein in said user
    operation, at least one of said at least one active sub-
    objects is selected, and wherein at least said selected
    sub-object is presented in said second representation.

5. The method according to claim 1, wherein at least two sub-
    objects of said plurality of sub-objects are made active
    sub-objects.

6. The method according to claim 1, wherein said at least partial division of said at least one object into said plurality of sub-objects is based on a structure of at least a part of said at least one object.

7. The method according to claim 1, wherein said at least partial division of said at least one object into said plurality of sub-objects is based on a sectioning algorithm.

8. The method according to claim 1, wherein in said first representation, at least one sub-object of said plurality of sub-objects is scaled to a size that is smaller than the original presentation size of said respective sub-object.

9. The method according to claim 1, wherein in said first representation, at least one sub-object of said plurality of sub-objects is cropped.

10. The method according to claim 1, wherein in said first representation, at least one sub-object of said plurality of sub-objects is indicated by an icon.

11. The method according to claim 1, wherein sub-objects of said plurality of sub-objects with a size that is above a size threshold, or that contain an amount of information that is above an information threshold are made active sub-objects, or both.

12. The method according to claim 1, wherein at least one of said at least one active sub-objects is automatically focused, or selected according to a selection criterion, or both.

13. The method according to claim 1, wherein in said second representation, said at least one active sub-object is scaled to a size that is larger than its size in said first representation.

14. The method according to claim 1, wherein within at least one of said sub-objects presented in said first representation, elements can be directly selected by a user.

15. The method according to claim 1, wherein said plurality of sub-objects is composed of different types of sub-objects, and wherein at least one group of sub-objects of a second type is associated with at least one sub-object of a first type.

16. The method according to claim 15, wherein said at least one active sub-object that is present in said second representation is said at least one sub-object of said first type, and wherein in response to a further user operation on said at least one sub-object of said first type, said at least one group of sub-objects of said second type associated with said at least one sub-object of said first type is presented.

17. A computer program with instructions operable to cause a processor to perform the method steps of claim 1.

18. A computer program product comprising a computer program with instructions operable to cause a processor to perform the method steps of claim 1.

19. A device for presenting at least a part of an object, comprising:

- means for at least partially dividing at least one object into a plurality of sub-objects;
- means for presenting said plurality of sub-objects in a first representation;
- means for determining at least one sub-object of said plurality of sub-objects to be made an active sub-object; and
- means for making said at least one sub-object of said plurality of sub-objects an active sub-object; and
- means for presenting at least one of said at least one active sub-objects in a second representation.

20. The device according to claim 19, wherein said sub-objects are presented on a display of a portable electronic device.

21. A system for presenting at least a part of an object, comprising:
- means for at least partially dividing at least one object into a plurality of sub-objects;
- means for presenting said plurality of sub-objects in a first representation,
- means for determining at least one sub-object of said plurality of sub-objects to be made an active sub-object; and
- means for making said at least one sub-object of said plurality of sub-objects an active sub-object; and
- means for presenting at least one of said at least one active sub-objects in a second representation.

Set of Amended Claims

1.   A method for presenting at least a part of an object,
     comprising:
-    at least partially dividing at least one object into a
     plurality of sub-objects;
-    presenting said plurality of sub-objects in a first
     representation,
-    determining at least one sub-object of said plurality of
     sub-objects to be made an active sub-object; and
-    making said at least one sub-object of said plurality of
     sub-objects an active sub-object; and
-    in response to a user operation on said at least one
     active sub-object, presenting at least one of said at
     least one active sub-objects in a second representation.

2.   The method according to claim 1, wherein said at least one
     object and said sub-objects are 3D-objects.

3.   The method according to claim 1, wherein said at least one
     object is a page, and wherein said sub-objects are areas.

4.   The method according to claim 1, wherein in said user
     operation, at least one of said at least one active sub-
     objects is selected, and wherein at least said selected
     sub-object is presented in said second representation.

5.   The method according to claim 1, wherein at least two sub-
     objects of said plurality of sub-objects are made active
     sub-objects.

6. The method according to claim 1, wherein said at least partial division of said at least one object into said plurality of sub-objects is based on a structure of at least a part of said at least one object.

7. The method according to claim 1, wherein said at least partial division of said at least one object into said plurality of sub-objects is based on a sectioning algorithm.

8. The method according to claim 1, wherein in said first representation, at least one sub-object of said plurality of sub-objects is scaled to a size that is smaller than the original presentation size of said respective sub-object.

9. The method according to claim 1, wherein in said first representation, at least one sub-object of said plurality of sub-objects is cropped.

10. The method according to claim 1, wherein in said first representation, at least one sub-object of said plurality of sub-objects is indicated by an icon.

11. The method according to claim 1, wherein sub-objects of said plurality of sub-objects with a size that is above a size threshold, or that contain an amount of information that is above an information threshold are made active sub-objects, or both.

12. The method according to claim 1, wherein at least one of said at least one active sub-objects is automatically focused, or selected according to a selection criterion, or both.

13. The method according to claim 1, wherein in said second representation, said at least one active sub-object is scaled to a size that is larger than its size in said first representation.

14. The method according to claim 1, wherein within at least one of said sub-objects presented in said first representation, elements can be directly selected by a user.

15. The method according to claim 1, wherein said plurality of sub-objects is composed of different types of sub-objects, and wherein at least one group of sub-objects of a second type is associated with at least one sub-object of a first type.

16. The method according to claim 15, wherein said at least one active sub-object that is present in said second representation is said at least one sub-object of said first type, and wherein in response to a further user operation on said at least one sub-object of said first type, said at least one group of sub-objects of said second type associated with said at least one sub-object of said first type is presented.

17. A computer program with instructions operable to cause a processor to perform the method steps of claim 1.

18. A computer program product comprising a computer program with instructions operable to cause a processor to perform the method steps of claim 1.

19. A device for presenting at least a part of an object, comprising:

- means for at least partially dividing at least one object into a plurality of sub-objects;
- means for presenting said plurality of sub-objects in a first representation;
- means for determining at least one sub-object of said plurality of sub-objects to be made an active sub-object; and
- means for making said at least one sub-object of said plurality of sub-objects an active sub-object; and
- means for presenting at least one of said at least one active sub-objects in a second representation.

20. The device according to claim 19, wherein said sub-objects are presented on a display of a portable electronic device.

21. A system for presenting at least a part of an object, comprising:
- means for at least partially dividing at least one object into a plurality of sub-objects;
- means for presenting said plurality of sub-objects in a first representation,
- means for determining at least one sub-object of said plurality of sub-objects to be made an active sub-object; and- means for making said at least one sub-object of said plurality of sub-objects an active sub-object; and
- means for presenting at least one of said at least one active sub-objects in a second representation.